

WHAT IS CLAIMED IS:

1. A general primer for amplifying and detecting Human Papillomavirus genotypes,

which is an oligonucleotide selected from the group consisting of:

- (a) SEQ ID NO: 1 or a sequence which is fully complementary to SEQ ID NO: 1;
- (b) SEQ ID NO: 2 or a sequence which is fully complementary to SEQ ID NO: 2;
- (c) SEQ ID NO: 3 or a sequence which is fully complementary to SEQ ID NO: 3;
- (d) SEQ ID NO: 4 or a sequence which is fully complementary to SEQ ID NO: 4;
- (e) SEQ ID NO: 5 or a sequence which is fully complementary to SEQ ID NO: 5;
- (f) SEQ ID NO: 6 or a sequence which is fully complementary to SEQ ID NO: 6;

and

- (g) SEQ ID NO: 7 or a sequence which is fully complementary to SEQ ID NO: 7.

2. A general primer for amplifying and detecting Human Papillomavirus genotypes,

which is an oligonucleotide selected from the group consisting of:

- (a) SEQ ID NO: 8 or a sequence which is fully complementary to SEQ ID NO: 8;
- (b) SEQ ID NO: 9 or a sequence which is fully complementary to SEQ ID NO: 9;
- (c) SEQ ID NO: 10 or a sequence which is fully complementary to SEQ ID NO: 10
- (d) SEQ ID NO: 11 or a sequence which is fully complementary to SEQ ID NO: 11
- (e) SEQ ID NO: 12 or a sequence which is fully complementary to SEQ ID NO: 12;
- (f) SEQ ID NO: 13 or a sequence which is fully complementary to SEQ ID NO: 13; and

(g) SEQ ID NO: 14 or a sequence which is fully complementary to SEQ ID NO: 14.

3. A general primer pair for use in a nucleic acid amplification process for amplifying of Human Papillomavirus genotypes, wherein a first primer is an oligonucleotide selected from the group consisting of:

(a) SEQ ID NO: 1 or a sequence which is fully complementary to SEQ ID NO: 1;

(b) SEQ ID NO: 2 or a sequence which is fully complementary to SEQ ID NO: 2;

(c) SEQ ID NO: 3 or a sequence which is fully complementary to SEQ ID NO: 3;

(d) SEQ ID NO: 4 or a sequence which is fully complementary to SEQ ID NO: 4;

(e) SEQ ID NO: 5 or a sequence which is fully complementary to SEQ ID NO: 5;

(f) SEQ ID NO: 6 or a sequence which is fully complementary to SEQ ID NO: 6;

and

(g) SEQ ID NO: 7 or a sequence which is fully complementary to SEQ ID NO: 7;

and a second primer is an oligonucleotide selected from the group consisting of:

(h) SEQ ID NO: 8 or a sequence which is fully complementary to SEQ ID NO: 8;

(i) SEQ ID NO: 9 or a sequence which is fully complementary to SEQ ID NO: 9;

(j) SEQ ID NO: 10 or a sequence which is fully complementary to SEQ ID NO: 10

(k) SEQ ID NO: 11 or a sequence which is fully complementary to SEQ ID NO: 11

(l) SEQ ID NO: 12 or a sequence which is fully complementary to SEQ ID NO:

12;

(m) SEQ ID NO: 13 or a sequence which is fully complementary to SEQ ID NO:

13; and

(n) SEQ ID NO: 14 or a sequence which is fully complementary to SEQ ID NO: 14.

4. The general primer pair as in claim 3, wherein the first primer is (a) and the second primer is (h), the primer pair amplifies the Human Papillomavirus genotypes 1a, 2a, 3, 4, 6b, 7, 10, 11, 13, 16, 16r, 18, 26, 27, 28, 30, 31, 32, 33, 34, 36, 35h, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 65, 66, 67, 68, 70, 72, 73, 74 and 77.
5. The general primer pair as in claim 3, wherein the first primer is (b) and the second primer is (i), the primer pair amplifies the Human Papillomavirus genotypes 1a, 2a, 3, 4, 6b, 7, 10, 11, 13, 16, 16r, 18, 26, 27, 28, 30, 31, 32, 33, 34, 35, 35h, 39, 40, 42, 43, 44, 45, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 65, 66, 67, 68, 70, 72, 73, 74 and 77.
6. The general primer pair as in claim 3, wherein the first primer is (c) and the second primer is (j), the primer pair amplifies the Human Papillomavirus genotypes 2a, 3, 6b, 7, 10, 11, 13, 16, 16r, 18, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 35h, 39, 40, 42, 43, 44, 45, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 66, 67, 68, 70, 72, 73, 74, 75 and 76.
7. The general primer pair as in claim 3, wherein the first primer is (d) and the second primer is (k), the primer pair amplifies the Human Papillomavirus genotypes 3, 6b, 7, 10, 11, 13, 16, 18, 26, 29, 30, 31, 32, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 55, 56, 58, 59, 60, 61, 62, 64, 66, 68, 70, 73, 74, 75, 76 and 77.

8. The general primer pair as in claim 3, wherein the first primer is (e) and the second primer is (j), the primer pair amplifies the Human Papillomavirus genotypes 2a, 3, 6b, 10, 11, 13, 16, 18, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 39, 40, 43, 44, 45, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 61, 62, 64, 66, 67, 68, 70, 72, 73, 75, 76 and 77.
9. The general primer pair as in claim 3, wherein the first primer is (f) and the second primer is (l), the primer pair amplifies the Human Papillomavirus genotypes 2a, 7, 10, 11, 13, 16, 18, 28, 29, 30, 31, 32, 33, 35, 39, 40, 42, 43, 44, 45, 52, 53, 54, 55, 56, 58, 59, 61, 63, 66, 67, 68, 70, 72, 75, 76 and 77.
10. The general primer pair as in claim 3, wherein the first primer is (g) and the second primer is (m), the primer pair amplifies the Human Papillomavirus genotypes 2a, 3, 6b, 7, 10, 11, 13, 16, 18, 26, 29, 30, 31, 32, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 55, 56, 58, 59, 60, 61, 65, 66, 67, 68, 70, 73, 74 and 77.
11. The general primer pair as in claim 3, wherein the first primer is (g) and the second primer is (n), the primer pair amplifies the Human Papillomavirus genotypes 2a, 3, 6b, 7, 10, 11, 13, 16, 18, 26, 29, 30, 31, 32, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 55, 56, 58, 59, 60, 61, 65, 66, 67, 68, 70, 73, 74 and 77.
12. The general primer pair as in claim 3, wherein the first primer is (d) and the second primer is (h), the primer pair amplifies the Human Papillomavirus genotypes 3, 6b, 7, 10, 11, 13, 16, 18, 26, 29, 30, 31, 32, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 55, 56, 58, 59, 60, 61, 65, 66, 67, 68, 70, 73 and 74.

13. A method of amplifying DNA of Human Papillomavirus genotypes comprising performing a nucleic acid amplification process using a pair of general primers according to claim 3.
14. The method as in claim 13, wherein the pair of general primers are used at concentrations of 20 ~ 50 pM.
15. A method of analyzing a sample for the presence therein of Human Papillomavirus genotypes which comprises the steps of:
 - (a) amplifying DNA of a Human Papillomavirus in the sample by means of a nucleic acid amplification process using a pair of general primers according to claim 3; and
 - (b) detecting an amplification product wherein the occurrence of the amplification product indicates presence of Human Papillomavirus genotypes in the sample.
16. The method as in claim 15, wherein the amplification product is labeled.
17. The method as in claim 15, wherein the amplification step is carried out at the general primers concentration of 20 ~ 50 pM.
18. The method as in claim 15, wherein the sample is obtained from a cervical cell.
19. A kit comprising:
 - (a) a pair of primer according to claim 3;
 - (b) complex of dNTP (dATP, dGTP, dCTP, and dTTP);
 - (c) polymerase; and
 - (d) PCR buffer solution.